SWBAT: observe interference and moire patterns

Jan 4-7:20 AM

Concept Sheet

~ 7 rows when we're done...

We'll fill in two terms (rows) today.

Concept	Meaning	Sym-bol	Units	Picture
FREQUENCY	HOW MANY PER UNIT OF TIME FREQ = # / TIME	f, f = 1/T	hertz, Hz = 1/sec	00:01
PERIOD	HOW MUCH TIME FOR ONE. PERIOD = TIME / #	T, T = 1/f	seconds, sec.	TIME
TRANSVERSE: WHEN THE MEDIUM VIBRATES ACROSS THE DIRECTION THE WAVE TRAVELS.				
LONGITUDINAL: WHEN THE MEDIUM VIBRATES ALONG THE DIRECTION THE WAVE TRAVELS.				
AMPLITUDE	HOW FAR FROM THE MIDDLE.	A	meters, m	λ, A
WAVELENGTH	HOW FAR FOR ONE "BACK & FORTH"	LAMBDA, λ	meters, m	λ
WAVESPEED	DISTANCE OF A WAVE / TIME OF A WAVE	V	meters/second, m/s	TIME

Feb 18-6:50 AM

SECA Physics
Wednesday 15 April 2014

Welcome!!!

H. Leslie Grebe

Prizes...

* Pick up:
  - worksheet
  - slip of paper for later

Opening Questions:

What happens when 2 waves meet?

How could we test different ideas about what happens?

Centering

Sep 7-7:04 AM

Interference: Predict, Explain, Observe

1) What will it look like as these two pulses meet in the middle? After?

OBSERVED

FLAT

EXPLANATION: CANCELED OUT

2) What will it look like after these two pulses meet in the middle if one is bigger than the other?

1) • FLIP: LITTLE ONE ON TOP, GOING RIGHT
2) • CONTINUE: LITTLE ON BOTTOM, GOING LEFT
3) • BOUNCE OFF: LITTLE ON BOTTOM, GOING RIGHT

OBSERVATION:

BIG λ WON

PASSED THRU

Apr 12-7:13 AM

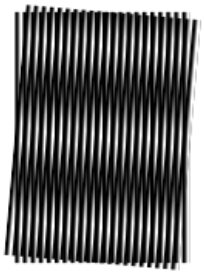
Interference means

the result of adding waves when they meet.

+ & −

WAVES KEEP DOING WHAT THEY WERE = PASS THROUGH

Visually, this is called a moiré pattern.



<http://en.wikipedia.org/wiki/Moir%C3%A9_pattern>

<http://www.youtube.com/watch?v=wbSHeRqnHNk>

Apr 19-7:28 AM

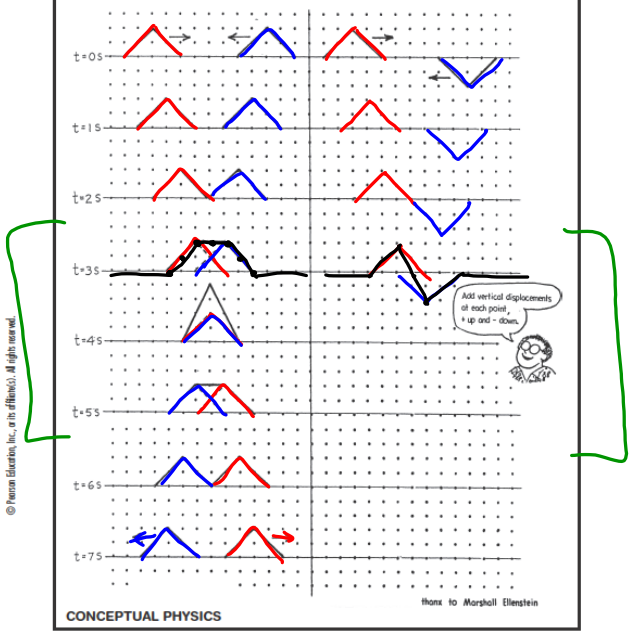
LANE LINES IN POOLS...

Name _____ Class _____ Date _____

Concept-Development Practice Page 25-3

Wave Superposition

A pair of pulses travel toward each other at equal speeds. The composite waveforms as they pass through each other and interfere are shown at 1-second intervals. In the left column, note how the pulses interfere to produce the composite waveform (solid line). Make a similar construction for the two wave pulses in the right column. Like the pulses in the first column, they each travel at 1 space per second.



CONCEPTUAL PHYSICS

Chapter 25 Vibrations and Waves 117

Apr 19-7:19 AM

Daily 3 Questions

CP: Wave worksheet due Thur.

* Every day except test/project days
* 3 Questions on the topics of the day
* Main source of daily points
* I am happy to give credit when I have no concerns about someone giving or getting help with the answers.

You can't get your points if you don't have your NAME!!!

Name	Period
1.	
2.	
3.	

Sep 9-7:32 AM

1) INTERFERENCE means the result from adding waves as they meet.

2) The **visual** result of combining light and dark patterns is called

A) longitudinal
B) Moire pattern
C) frequency

3) When two pulses head towards each other and meet on a string, they will

A) pass through each other
B) bounce off each other
C) neither

Apr 15-7:43 AM